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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,515	12/31/2003	Mineo Yamakawa	INTEL1140 (P15614)	9237

7590 12/23/2005

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EXAMINER
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MARTINELL, JAMES

ART UNIT	PAPER NUMBER
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1634

DATE MAILED: 12/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/750,515

Applicant(s)

YAMAKAWA ET AL.

Examiner

James Martinell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/17/04&10/11/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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The disclosure is objected to because of the following informalities.

- (a) In paragraph 0111, line 3, a blank appears.

Appropriate correction is required.

The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01. Embedded hyperlinks and/or other forms of browser-executable code appear in at least the following locations:

- (a) Paragraph 0183, line 4.

Claims 9 and 21 are objected to because of the following informalities.

- (a) Claim 9 has two periods; "resistance microscopy." should be changed to "resistance microscopy,".
- (b) In claim 21, "molecules is" should be changed to "molecule is".

Appropriate correction is required.

The drawings are objected to for the following reasons.

- (a) Figure 2B is not discussed in the Brief Description of the Drawings (page 2).
- (b) Figure 3 is illegible.
- (c) Figures 4A-4C are illegible.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the

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filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are vague, indefinite, and incomplete.

- (a) The recitation of "associated with" (claim 1) is vague and indefinite because it is not clear what the term means within the context of the claim.
- (b) The recitation of "detectable non-encoding feature" (claims 1, 15, 16, 20, 24, 29, and 33) is vague and indefinite because the instant application does not distinguish between a detectable non-encoding feature and an undetectable non-encoding feature.
- (c) The recitation of "non-encoding" (claims 1, 15, 16, 20, 24, 29, and 33) is vague and indefinite because it is not understood what is meant by the term.
- (d) The recitation of "coded probes" (claim 2) is incomplete because there is no antecedent basis for the term.
- (e) The recitation of "substantially all possible sequences" (claim 2) is vague, indefinite, and incomplete because the metes and bounds of "substantially" are not clear and because it is not clear whether only A, G, C, and T are to be used to the exclusion of any other nucleotides in the construction of the sequences.
- (f) The recitation of "the nucleic acid" (claims 6, 10, 11, and 12) is incomplete because there is no antecedent basis for the term.

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- (g) The recitation of "molecular combing" (claim 8) is vague and indefinite because the term is not defined.
- (h) The recitation of "are analyzed" (claim 14) is incomplete because there is no antecedent basis for the phrase.
- (i) The recitation of "associated with the nanocode" (claim 15) is vague and indefinite because it is not clear what the term means within the context of the claim.
- (j) The recitation of "checksum barcode segment" (claim 18) is vague and indefinite because it is not understood what is meant by the term within the context of the claim.
- (k) The recitation of "single molecule level surface analysis method" (claim 20) is vague and indefinite because the term is not defined in the application and it has no art-recognized definite meaning.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 20-28 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 4, 5, 9-18, and 28-31 of copending Application No. 10/241,152. Although the conflicting claims are not identical, they are not patentably distinct from each

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other because the claims of copending Application No. 10/241,152 embrace claims 20-28 of the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-15, 29-32, and 35 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 10-14 and 29-31 of copending Application No. 10/241,152. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of copending Application No. 10/241,152 embrace claims 1-15, 29-32, and 35 of the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 20-32 and 35 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-28 of copending Application No. 10/667,004. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of copending Application No. 10/667,004 embrace claims 20-32 and 35 of the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-4, 9, and 12-14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 10, 11, and 21 of copending Application No. 10/667,004. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of copending Application No. 10/667,004 embrace claims 1-4, 9, and 12-14 of the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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Claims 20-32 and 35 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-27 of copending Application No. 11/077,577.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of copending Application No. 11/077,577 embrace claims 20-32 and 35 of the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-4, 9, and 12-14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 10 and 11 of copending Application No. 11/077,577. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of copending Application No. 11/077,577 embrace claims 1-4, 9, and 12-14 of the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-36 are rejected under 35 U.S.C. 102(e) as being anticipated by either one of Chan et al (U.S. Patent Application Publication 2004/0058328) or Chan et al (U.S. Patent Application Publication 2004/0126820). The claimed invention is disclosed in each of the references.

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The applied references have a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the references, they constitute prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the references was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Claims 20-24 and 28 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Han et al (Nature Biotechnology 19: 631 (2001)). The probe compositions of claims 20-24 and 28 are embraced by the quantum-dot probes of Han et al (*e.g.*, see the abstract and figure 5).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4, 9-15, 20-23, 26, 28-32, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mirkin et al (U.S. Patent No. 6,361,944) in view of Nygren et al (U.S. Patent No. 6,060,237). Mirkin et al teaches nucleic acid molecular hybridization using oligonucleotide probes that have nanoparticles attached (*e.g.*, see Figure 13B and column 50, line 14 through column 51, line 15). Nygren et al teaches the use of scanning microscopy to detect nucleic acids in nucleic acid molecular



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hybridization assays (*e.g.*, see column 3, lines 18-55). It would have been obvious for one of ordinary skill in the art at the time the invention was made to detect the nanoprobe of Mirkin et al using the detection method of Nygren et al in order to localize hybridized probes on an array.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Martinell whose telephone number is (571) 272-0719.

The examiner works a flexible schedule and can be reached by phone and voice mail.

Alternatively, a request for a return telephone call may be e-mailed to [james.martinell@uspto.gov](mailto:james.martinell@uspto.gov). Since e-mail communications may not be secure, it is suggested that information in such requests be limited to name, phone number, and the best time to return the call.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones, can be reached on (571) 272-0745.

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**OFFICIAL FAX NUMBER**

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Any Official Communication to the USPTO should be faxed to this number.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

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**James Martinell, Ph.D.**  
**Primary Examiner**  
**Art Unit 1634**

*12/20/05*